

the WHITE HOUSE PRESIDENT BARACK OBAMA



# Help NASA Power the International Space Station

JANUARY 25, 2013 AT 12:24 PM ET BY CRISTIN DORGELO



---

Summary: Last week, NASA launched the ISS Longeron Shadowing Optimization Challenge—a \$30,000 competition that challenges citizen solvers to develop software algorithms that make solar panels on the International Space Station (ISS) more efficient. NASA is seeking solutions that reduce or eliminate the shadows the station casts upon itself at various points during its orbits of Earth. Ultimately, winning algorithms will help add power to the space station and expand the number and types of science experiments that can performed onboard.

---

Last week, NASA launched the [ISS Longeron Shadowing Optimization Challenge](#)—a \$30,000 competition that challenges citizen solvers to develop software algorithms that make solar panels on the International Space Station (ISS) more efficient. NASA is seeking solutions that reduce or eliminate the shadows the station casts upon itself at various points during its orbits of Earth. Ultimately, winning algorithms will help add power to the space station and expand the number and types of science experiments that can performed onboard.

NASA's [Center of Excellence for Collaborative Innovation](#) and its Vehicle Integrated Performance, Environments and Resources (VIPER) office at Johnson Space Center are using the challenge to enlist citizen innovators in the hunt for optimal positions for solar collectors fastened to the space station so that that they generate as much power as possible on the spacecraft. This power is essential to performing science activities on the world class orbiting laboratory.

The energy used to power the space station is generated by eight sets of solar cells, or arrays, held to the station by longerons, long arms that are very sensitive to temperature changes—expanding when hot, and contracting when cold. Uneven shadows on longerons can cause solar array masts to buckle and create a hazard to the space station. In addition to maximizing the energy produced on the space station, winning algorithms must also minimize shadows on the longerons to help ensure no longerons fail.

### NASA ISS Longeron Challenge Introduction



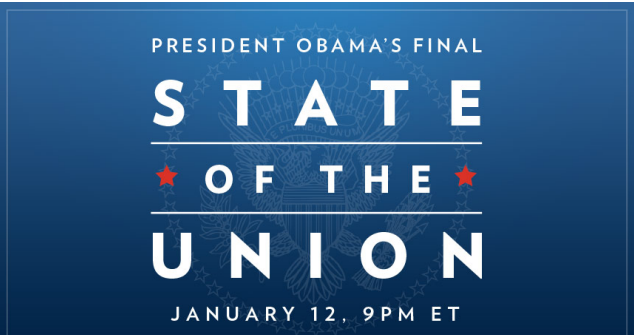
The total prize purse for the challenge is \$30,000. Top prizes include \$10,000 for the best solution with second and third placed solutions earning \$5,000 and \$3,000 respectively, as well as milestone prizes totaling \$12,000. As a fun bonus, NASA-mission stickers which have actually orbited the Earth on Space Shuttle Endeavour will be awarded to the top five finishers.

The challenge is now live on the [NASA Tournament Lab](#) (NTL) on [TopCoder.com](#). NTL, operated in cooperation with Harvard University, is an online virtual facility that harnesses the capabilities of citizen solvers to create innovative, efficient solutions for specific, real-world challenges being faced by the space agency's researchers. From NTL, to the [Centennial Challenges](#) Program, to the [NASA Open Innovation Pavilion](#), NASA is on the leading edge of how prizes can be used for mission impact in the Federal government.

The competition is one of more than 230 incentive prizes [offered by over 45 Federal agencies](#) on [Challenge.gov](#) so far. Incentive prizes can yield a high return on the dollar and can reach beyond

the usual suspects to increase the number of entrepreneurs and citizens tackling tough problems.

Cristin Dorgelo is Assistant Director for Grand Challenges at OSTP



THE FINAL STATE OF THE UNION

Watch President Obama's final State of the Union address.



THE SUPREME COURT

Read what the President is looking for in his next Supreme Court nominee.



FIND YOUR PARK

Take a look at America's three newest national monuments.



[HOME](#)   [BRIEFING ROOM](#)   [ISSUES](#)   [THE ADMINISTRATION](#)   [PARTICIPATE](#)   [1600 PENN](#)

[En Espa ol](#) | [Accessibility](#) | [Copyright Information](#) | [Privacy Policy](#) | [USA.gov](#)